

1 **What is claimed is:**

- 2 1. An air intake for an oven, the oven having an inside and an outside comprising:
3 an intake duct; and
4 a movable intake flap, operably connected to the intake duct, having a closed and
5 an open orientation, the intake flap positioned so that when the intake flap is in the open
6 orientation, more of the intake flap is located on the inside of the oven than on the outside
7 of the oven, and
8 in the open orientation, the intake flap is open into the oven at a flap angle that
9 creates a low-pressure region to draw airflow into the oven from the intake duct.
- 10 2. The air intake of claim 1, wherein when the intake flap is in the open orientation,
11 all of the intake flap is located on the inside of the oven.
- 12 3. The air intake of claim 1, wherein the oven is a gas chromatographic oven and
13 wherein the intake duct is positioned beneath an oven and the intake duct includes one or
14 more cooling fans so that when the intake flap is open airflow is drawn from the one or
15 more cooling fans.
- 16 4. The air intake of claim 3, wherein the intake flap directs an airflow originating
17 from the one or more cooling fans to approximate a direction of a second airflow
18 originating from stirring fans inside the oven.
- 19 5. The air intake of claim 1, wherein the intake duct has a non-uniform cross-section.
- 20 6. The air intake of claim 1, wherein the intake flap is positioned at an advantageous
21 location in the oven, and wherein the advantageous location is determined based on an
22 assessment of airflow inside the oven.
- 23 7. The air intake of claim 1, wherein the flap angle is determined based on an
24 assessment of airflow inside the oven.
- 25 8. The inward opening oven intake of claim 1, further comprising a second flap
26 connected to the intake flap through a linkage system.
- 27 9. The inward opening oven intake of claim 8, further comprising a solenoid that
28 controls the intake flap and the second flap, wherein the intake flap opens at the flap
29 angle when the second flap opens at a second angle.
- 30 10. The inward opening oven intake of claim 8, wherein the flap angle and the second
31 angle are pre-defined.
- 32 11. The inward opening oven intake of claim 8, wherein the intake flap and the
33 second flap are controlled by a stepper motor.

- 1 12. The inward opening oven intake of claim 8, wherein the intake flap and the
2 second flap are controlled by a proportional control device.
- 3 13. The inward opening oven intake of claim 9, wherein the solenoid enables the
4 intake flap to automatically snap shut during a power loss.
- 5 14. The inward opening oven intake of claim 1, wherein the flap angle is an angle
6 between 0° to 90°.
- 7 15. A method for providing an inward opening oven intake for a gas chromatographic
8 oven, comprising:
9 assessing an airflow inside an oven;
10 determining an advantageous location for an intake flap;
11 placing the intake flap at the advantageous location near a bottom of the oven;
12 determining a flap angle of an opening of the intake flap;
13 enabling the intake flap to open into the oven at the flap angle to create a low-
14 pressure region to draw airflow into the oven from one or more cooling fans.
- 15 16. The method of claim 15, further comprising enabling the intake flap to open into
16 the oven at the flap angle to direct an airflow originating from one or more cooling fans to
17 approximate a direction of a second airflow originating from stirring fans inside the oven
- 18 17. The method of claim 15, wherein the determining the flap angle step includes
19 determining the flap angle based on an assessment of an airflow inside the oven and a
20 second angle of a second airflow flowing past an region where the intake flap is located.
- 21 18. A system for providing an inward opening oven intake for a gas chromatographic
22 oven, comprising:
23 an intake duct positioned beneath an oven, the intake duct having one or more
24 cooling fans; and
25 an intake flap positioned at an advantageous location near a bottom of the oven,
26 the intake flap opening into the oven at a flap angle to direct an airflow originating from
27 the one or more cooling fans to approximate a direction of a second airflow originating
28 from stirring fans inside the oven.
- 29 19. The system of claim 18, wherein the flap angle is determined based on an
30 assessment of an airflow inside the oven.
- 31 20. The system of claim 18, further comprising a solenoid that controls movement of
32 the intake flap and enables the intake flap to automatically snap shut during a power loss.